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LITHOGRAPHIC ABSTRACTS, JUNE 1960

PHOTOGRAPHY, TONE & COLOR CORRECTION

*INDUCTION OF FECHNER COLORS IN BLACK AND WHITE PHOTOGRAPHS. J. L. Brown. Science, Vol. 131, January 15, 1960, page 155. Ansco Abstracts, Vol. 20, No. 2, February 1960, page 60. The relationship of Land's experiments to the physiology of color perception is pointed out. Using a disk chopper the eye is first stimulated by white light from a transparency photographed through a green filter and immediately afterwards from a red filter photograph, followed by a dark interval before the cycle is repeated. Objects in the picture then assume colors of very low saturation corresponding in hue approximately to the original colors. Reversal of the cycle changes the color impressions. The use of color filters in the viewing system enhances the primary colors. Increase of the rotational speed to the disappearance of flicker eliminates the color effect.

*PHOTOCONDUCTOGRAPHY. Belgian Patent 561,403 Filed in U.S. March 30, 1956, and in Belgium October 4, 1957. E. G. Johnson; B. W. Neher, Assigned to Minnesota Mining & Mfg. Co. Monthly Abstract Bulletin, Vol. 45, No. 4, April 1959, page 202. Stable photoconductographic images are obtained by electrolytic development, e.g., in a solution of cupric sulfate, silver nitrate, nickel chloride, etc., of the exposed areas of a zinc oxide-resin photoconductive recording layer, coated on an electrically conducting support, e.g., aluminum.

THE 'DROP-OUT' PROCESS IN LITHOGRAPHY (4). Philip Grant. Lithographer and Offset Printer, Vol. 55, No. 9, Sept. 1959, pp. 32, 34, 2 pages. Brief description of a method based on the fact that aniline colors photograph white by infra-red, metallic and carbon-based pigments as if they were black. Artist uses these facts to control drop-out. Method is described, and it is reported that required materials are readily available and the process is free of patent rights restrictions.

THE 'DROP-OUT' PROCESS IN LITHOGRAPHY (5). Philip Grant. Lithographer and Offset Printer, Vol. 55, No. 10, Oct. 1959, pp. 21-4, 4 pages. The method covered in this installment involves the use of two exposures, one with, and a short exposure without the screen.

*PHOTOTYPOGRAPH. U. S. Patent 2,896,523 - Application October 27, 1948. Cecil L. Tansel - Assigned to Harris-Intertype Corp. Official Gazette 744, No. 4, July 28, 1959, p. 995-996. In apparatus adapted for photographic printing upon light-sensitive film or the like, the combination of a carrier mounted for continuous rotation during operation, said carrier having on its surface a master stencil of a font of characters, said font having a plurality of cases, a source of light located adjacent the carrier and adapted to flash when desired to cause a beam of light to pass through the stencil while the drum is rotating and expose film in accordance with the particular character of the stencil interposed in the beam during the flash, a plurality of arms mounted for rotation with said carrier, there being one arm for each case in said font of characters, a character selector having as many controls as there are characters in a single case mounted in a fixed circular position adjacent the path of travel of said arms, an electrical responsive device on each of said arms capable of causing the source of light to flash in response to government by a particular control of said character selector and means for selecting a particular case from said font of characters by selectively connecting only one of said electrical responsive devices to said source of light at a time.

*PHOTOGRAPHIC RETOUCHING OPAQUE. U. S. Patent 2,895,841 - Application November 7, 1957. William J. Rogers - Assigned to Eastman Kodak Co., Inc. Official Gazette 744, No. 3, July 21, 1959, p. 802. A red opaque containing water, corn syrup, the sodium salt of sulfonated naphthalene formaldehyde condensates, gum arabic, phenol, a red pigment and 15-25% by weight of triethylene glycol.

*APPARATUS FOR BALANCING SCANNING SYSTEMS. U. S. Patent 2,895,006 - Application August 28, 1952. Vincent C. Hall - Assigned to Eastman Kodak Company, Inc. Official Gazette 744, No. 2, July 14, 1959, p. 555. In a scanning system, a rotatable cylindrical drum adapted to carry a visual subject in the form of a flexible sheet wrapped part way around the drum circumference to leave between the unlapped edges of the sheet a gap of short circumferential extent relative to that of the sheet; means to direct towards said drum when rotating a light beam which passes over the circumference thereof to cyclically traverse said subject and gap in alternation, means including photoelectric means whereby said subject and gap to develop from said beam a light signal comprised in alternation of relatively long trains of intensity variations representative of tonal gradations of said subject and of relatively short pulses of constant intensity light of reference intensity, an electric signal channel including said photoelectric means adapted to translate said alternately occurring variable intensity trains and constant intensity pulses of said light signal into corresponding trains and pulses in the amplitude of an electric signal developed in said channel, control means to electrically adjust the amplitude of said electric signal in accordance with the strength and sense of a control signal received by said control means, amplitude comparator means adapted when actuated to develop from said electric signal a signal corresponding to the difference in direction and amount of the instantaneous amplitude of said electric signal from a predetermined amplitude value therefor, means operable synchronously with the rotation of said drum to actuate said comparator means only when said beam is traversing said gap to thereby render said difference signal in the form of intermittent pulses of variable strength and sense, a resistance-capacitance network characterized by a time constant which is comparable in value to the time required for at least one rotation of said drum, means whereby said resistance-capacitance network is adapted to translate the intermittent pulses of said difference signal into a predominantly D.C. signal of a strength and sense corresponding to that of said last-named pulses, and to apply said D.C. signal as said control signal to said control means, and means whereby said D.C. signal is applied thereto with appropriate polarity to stabilize the characteristic expressing for said scanning system the quantitative relation between instantaneous light intensity and instantaneous amplitude as manifested, respectively, in said trains of said light signal and said trains of said electric signal.

*VARIABLE BLACK PLATE FOR USE IN COLOR REPRODUCTION SYSTEMS. U. S. Patent #2,892,016 - Application September 26, 1956. Vincent C. Hall - Assigned to Time, Inc. Official Gazette 743, No. 4, June 23, 1959, p. 943. Apparatus for obtaining variable percentage undercolor removal in a facsimile color reproduction system wherein electro-optical means scans successive elemental areas of a colored original subject to transmit through respective electric channels a plurality of electric color signals respectively representing in amplitude the intensities of a plurality of additive primary color components of the colors of the scanned areas, and wherein a signal selector circuit is coupled to receive said color signals from respective sections of said channels and is adapted to separate from the received color signals that color signal which represents the additive primary color component of greatest intensity, said apparatus comprising a plurality of exponential modulators respectively coupled in said channels following said sections, each modulator being adapted to modulate the color signal in the associated channel in accordance with the relation

$$E_3 = \frac{KE_1}{E_2^p}$$

where E_1, E_2, E_3, K and p, respectively represent the input color signal to the modulator, an additional input signal to the modulator, the output color signal from the modulator, a constant, and an exponent which has a value less than one and which remains constant in value despite variations in the amplitude of E_2, and a signal distortion circuit having an input connected to receive said separated signal from said selector circuit and an output connected to supply said separated signal in distorted form as the E_2 input to each of said modulators, said distortion circuit having a non-linear signal transfer characteristic whereby different values of the input/output ratio in amplitude are created for separated signals of different input amplitude passing through said distortion circuit.

*PROCESS FOR MAKING PHOTOGRAPHIC NEGATIVE RECORDS AND USING THE SAME FOR THE PRODUCTION OF THREE DIMENSIONAL IMAGES. U. S. Patent 2,891,339 - Application Sept. 12, 1952. W. S. Kao. Official Gazette 743, No. 4, June 23, 1959, p. 764. The process for making photographic negative records on light sensitive surfaces and using the same for the production of three dimensional positive images of an object, said process comprising sequentially illuminating successive depth forming contour peripheries of the object along the photographic axis with a narrow sheet of photo-actinic rays while varying such rays in intensity in a manner to produce a gradient change in density of the contours on the photographic negative record, photographing individually the sequential series of such contour peripheries in rapid succession and in synchronization with the movement of the sheet of light rays along the depth of the object, and using the negative records so made for photo=sculpturing, engraving, and copying without separation of the individual contour peripheries to produce a projection or solid relief image in three dimensions.

*PHOTOCOMPOSING APPARATUS. U. S. Patent #2,898,830 - Application June 24, 1958. Robert W. Wirtz, Harold B. Ratcliff, and John S. Turner, Jr. - Assigned to Wirtz Company, a Copartnership. Official Gazette 745, No. 2, August 11, 1959, p. 385. A keyboard actuated photocomposer, comprising a set of actuating character keys, an exposure shuttle having a set of characters thereon related to said character keys, a film holder, a light projection system arranged to pass light through a part of said exposure shuttle to film in said film holder, a shutter mechanism to prevent unwanted film exposure, a drive motor energizable by operation of said character keys, mechanism connecting said drive motor to said exposure shuttle for movement thereof, a set of actuatable indexing devices, actuating mechanism connecting each indexing device to at least one of said character keys, a movable bar adapted to engage any actuated indexing device, means connecting said drive motor to said bar, a set of locking means on said exposure shuttle corresponding to the characters thereon, a movable control and locking arm, and control means operatively associated with said arm and connected to said drive motor, said bar and said shutter, whereby actuation of an indexing device corresponding to an operated character key predetermines the operation of said drive motor and movement of said exposure shuttle and said bar, contact by said bar with the actuated indexing device energizes said control means, and energization of said control means inactivates said drive motor, moves said arm to engage the locking means corresponding to the exposure shuttle character related to said operated key, and operates said shutter mechanism to photographically expose said exposure shuttle character to said film.

*THE GAMMATRON: A METHOD OF DEVELOPMENT CONTROL. H. B. Archer. Print. Tech., Vol. 3, No. 1, September 1959, pp. 41-51; discussion pp. 51-3; Printing Abstracts 14, No. 11, November 1959, pp. 881-882. The Gammatron is an automatic developing machine in which the density of the photographic material is monitored during development so that the development is stopped automatically at any predetermined

level. The degree of development thus becomes independent of temperature, developer activity or emulsion contrast. The principle and construction of the Prototype of the device, theoretical considerations and other applications are discussed.

HOW TO STANDARDIZE YOUR 3-COLOR OPERATION. Warren L. Rhodes. Modern Lithography 27, No. 12, December 1959, pp. 40,41,42,112,113 (5 pages). Author points out that while "Short-run 3-Color" is being done by many printers, no two do it the same way. A means of standardization throughout the various steps is outlined in some detail. It is based largely on gray scales and densitometer measurements. It attempts to achieve a balance of the three-color printings which will give as close as possible to a neutral gray throughout the entire range of tone values.

COLOR UNDER CONTROL - From a talk presented at the 1959 NAPL Convention. J. Tom Morgan, Jr. Modern Lithography 27, No. 12, December 1959, pp. 34,35,36,108 109 (5 pages). Author first outlines the increase of color printing by lithography, then sets up a concept of quality as applied to color lithography. To establish a color control system, it is necessary to develop a 15 step tone scale based on 50% increments. This is related to transmission densities in the film and reflection densities when printed on paper, using black and colored inks (with appropriate filters). Color charts were prepared showing the effect of various combinations of inks and printing densities. The use of this chart in controlling variables in the various steps of copy, camera, dot etching, platemaking and press is explained in some detail.

*THE SIMMON BROS. ELECTRONIC COLOUR COMPUTOR. Anon. Photo-Techn. u.-Wirtsch., No. 8, 1959, p. 379 (in German); Printing Abstracts 14, No. 11, November 1959, p. 878. The computor considerably facilitates the preparation of colour enlargements. The result of enlargement can be demonstrated in advance. After a small sized test photograph has been prepared, the effect of factors such as the density of the negative, enlargement and colour matching can be automatically and electrically recorded. A switch board (or panel) with the Omega Tri-color computor serves to determine the exposure time. (Simmon Bros., Long Island City, N.Y.)

PLANOGRAPHIC PRINTING PROCESSES

*METHOD OF IMPROVING CHEMICAL COATING ON ALUMINUM. U. S. Patent 2,894,865 - Application June 21, 1957. Michael J. Pryor - Assigned to Kaiser Aluminum & Chemical Corp. Official Gazette 744, No. 2, July 14, 1959, p. 525. In a process for chemically coating aluminum and aluminum alloy products, of a nature such that entrapment corrosion presents a major problem, wherein said products are subjected to the action of an acid aqueous solution containing chromate ions, phosphate ions and fluorine ions as active coat-forming constituents to produce a coating on said surfaces, the improvement comprising the step of treating said coating with a rinsing solution containing a reducing agent that does not give insoluble oxidation products, said solution having a pH of about 3.0 to 7.0.

*PROCESS FOR PRODUCING ALUMINUM-COATED BLACK IRON STRIP. U. S. Patent #2,906,641 - Application April 18, 1958. Wallace F. Bugbee and Philip J. Clough - Assigned to National Research Corp. Official Gazette 746, No. 5, September 29, 1959, p. 1395. In a process for producing an aluminum-coated black iron strip which is suitable for manufacture of containers and the like and wherein said strip of black iron is moved past at least one source of aluminum vapors positioned in an evacuated chamber to deposit a thin film of aluminum on black iron, the molten aluminum in the source of aluminum vapors being maintained at a temperature on the order of 1100° C. to 1200° C., the improvement which comprises maintaining the black

iron at a temperature between a maximum temperature of about 700° F. and a minimum temperature of about 400° F., the area of hot, molten aluminum being sufficiently large and the source of aluminum vapors being sufficiently close to the black iron during coating so that aluminum is deposited on the black iron at a rate in excess of 0.01 gram per square foot per second.

*LITHOGRAPHIC PLATES. U. S. Patent 2,907,273 - Application May 3, 1954. Charles F. Geese - Assigned to Chrome Steel Plate Corp. Official Gazette 747, No. 1, October 6, 1959, p. 82. A lithographic printing plate having image areas and non-image areas which comprises a low-carbon non-stainless steel plate, the non-image areas of said plate containing an overlying coating of dull hydrophilic ink-repellent chromium, the image areas of said plate being recessed relative to said chromium coating, said image areas being in a sensitized hydrophobic ink-receptive state and being comprised of the reaction product of said steel with a solution of ammonium chloride, ferric chloride, cupric chloride and bismuth oxychloride.

*PHOTOTHERMOGRAPHIC PROCESS. U. S. Patent 2,856,283 - Application May 7, 1956. E. C. Yackel and T. I. Abbott - Assigned to Eastman Kodak Co. Monthly Abstract Bulletin 45, No. 10, October 1959, p. 451. An image-transfer, photothermographic process is described. A silver halide emulsion layer containing a dispersion of wax is given an image exposure to light, processed by surface application, and then exposed to infrared radiation to melt the wax in the developed areas and facilitate transfer of the image to a receiving sheet. Corresponds to French Patent 1,174,787.

PAPER AND INK

COLOR INKS ON COLORED PAPER. Anon. Printing Magazine 83, No. 13, December 1959, pp. 50-51 (2 pages). The idea: "Printing on colored papers with inks (also colored) that give the visually correct amount of contrast between the printed message and the stock on which it is printed" is developed largely by means of quotations from Faber Birren (Color Consultant) and Norm Githens (Printer). In addition, examples are cited from a booklet: "The Age of Reason for Color" authored by those two.

EPOXIDIZED VEGETABLE OIL (From Ink Plant Observer). I. M. Bernstein. American Ink Maker 37, No. 12, December 1959, pp. 45, 63 (2 pages). A brief discussion of the chemistry of epoxidized vegetable oils leads to the conclusion that due to increased molecular size and complexity, inks with increased drying speed and flexibility should be possible. Some present uses of the material, notably as a corrosion inhibitor are pointed out.

*PREPARATION OF PAPER HAVING IMPROVED WET STRENGTH. U. S. Patent #2,913,356 - Application June 28, 1955. Carl W. Schroeder - Assigned to Shell Development Co., Inc. Official Gazette 748, No. 3, November 17, 1959, p. 771. A process for preparing paper having improved wet strength which comprises impregnating already formed paper with an aqueous medium containing a polyether polyepoxide and an epoxy curing agent so as to apply to the paper from 1% to 20% by weight of the paper of the said polyether polyepoxide and heating at a temperature between 100°C. and 200°C. to effect cure.

*APPARATUS FOR DETERMINATION OF SURFACE PROFILE. V. C. Setterholm and W. L. James. U.S. Dept. Agriculture For. Serv., For. Prod. Lab., No. 2130, Madison 5, Wisconsin, September 1958. Printing Abstracts, Vol. 14, No. 10, October 1959, page 793. The profile gauge indicates the deviation of a given point in the surface being measured from a reference plane. The reference plane is through

the highest points in the surface within a 2 inch radius of the given point. By moving the gauge linearly over the surface, the deviation from the reference plane of the points along a given line is measured. The profile gauge consists of a sensing head, a capacitance displacement gauge and its circuits, an oscillograph, and a means of moving the sensing head slowly and uniformly over the surface to be evaluated. It has been successfully used to measure paper profiles over a wide range of roughness. It is capable of making reproducible profiles of paper surfaces, indicating that the stress on the paper by the stylus is not great enough to disturb appreciably the fibres at the surface of the paper.

*ALPHA, GAMMA DIKETONES IN COMBINATION WITH METALLO-ORGANIC DRIERS AS DRYING ACCELERATORS FOR SICCATIVE COATINGS. U. S. Patent #2,894,849 - Application May 20, 1957. Oliver J. Grummitt and James A. Stearns - Assigned to the Sherwin-Williams Co. Official Gazette 744, No. 2, July 14, 1959, p. 522. A composition of matter, useful in catalytic quantity to accelerate the drying rate of siccative films, which composition consists essentially of an oil soluble metal soap paint drier and an alpha, gamma diketone to the general structure

$$R_1\text{--}\overset{\overset{O}{\|}}{C}\text{--}CH_2\text{--}\overset{\overset{O}{\|}}{C}\text{--}R_2$$

where R_1 and R_2 are selected from the group consisting of organic single ring radicals and organic lower aliphatic radicals where, when R_1 is a single ring group R_2 is a halogen substituted lower aliphatic group, but where R_1 is a lower aliphatic group R_2 is also a lower aliphatic group.

*PAPER IS IMPORTANT IN COLOUR PRINTING. D. Macdonald. Print in Britain 7, No. 3, July 1959, p. 71; Printing Abstracts 14, No. 11, November 1959, p. 858. Brief notes are given on the properties required for offset and letterpress colour printing.

ELECTRICALLY-CONDUCTIVE AND STATIC-FREE PAPERS. Mason Hayek. TAPPI 43, No. 2, February 1960, pp. 105-112 (8 pages). Organic chemicals have been found which can be used to make paper electrically conductive or to eliminate the static problems widely known in the paper and printing trades. This article briefly reviews the principles of static electrification and describes the mechanism of action of conductive chemicals and the properties of papers treated with these chemicals. A continuous film of conductive agent must cover the cellulose fibers of the paper. Coverage of the surface of the paper is enough for antistatic action, but coverage of the fibers through the bulk of the sheet is essential for conductive treatments. The chemicals function by adsorbing water and reducing the electrical resistance of the paper. The agents can be coated or padded onto paper for conductive effects and, also, can be sprayed for antistatic effects. Several types of conductive chemicals are discussed. The effectiveness of an agent depends upon its concentration, the nature of the paper, and the method of treatment.

PRINTING PROBLEMS ON PAPER. W. M. Delbrouck. TAPPI 42, No. 12, December 1959, pp. 184a, 185a, 186a (3 pages). A number of printing problems and the relationship of paper to them are described. Paper must have a variety of properties to withstand the printing and finishing operations and to still function in the finished print with proper finish, opacity, fold resistance, etc. The influence of poor photographic copy and improper pressroom procedures are emphasized.

PAPER PROBLEMS CAN BE AVERTED BY TESTING. Charles Shapiro. National Lithographer 67, No. 1, January 1960, pp. 44, 77, 78 (3 pages). In a talk before a New York group, Mr. Shapiro described the troubles paper can cause due to variations in moisture content. Suggestions were to keep the paper sealed when not on the press, and to test for moisture content and plan accordingly.

LITHOGRAPHY - GENERAL

STABILITY OF EMULSIONS OF WATER IN OIL. I. THE CORRELATION BETWEEN ELECTROKINETIC POTENTIAL AND STABILITY. W. Albers and J. Th. G. Overbeck. Journal of Colloid Science, Vol. 14, No. 5, October 1959, pages 501-509, 9 pages. Experiments on W/O emulsions of moderate concentration, stabilized with oil-soluble, ionizing stabilizers, show that in these emulsions no correlation exists between stability against flocculation and electrokinetic potential. Although, according to theoretical calculations, energy barriers of over 15 kT are present, if the radius of the dispersed globules is about 1 u and the electrokinetic potential exceeds 25 mv., they apparently do not prevent lasting contact between particles. All our emulsions flocculate rapidly, even in the presence of a surface potential considerably higher than 25 mv. A rather pronounced anticorrelation exists between the zeta potential and coalescence. It is explained as a consequence of the free mobility of the stabilizing molecules in the interface. The good stabilization against coalescence caused by some oleates of polyvalent metals is due to the formation of a thick film of partial hydrolyzates in the interface.

STABILITY OF EMULSIONS OF WATER IN OIL. II. CHARGE AS A FACTOR OF STABILIZATION AGAINST FLOCCULATION. W. Albers and J. Th. G. Overbeck. Journal of Colloid Science, Vol. 14, No. 5, October 1959, pages 510-518, 9 pages. It is shown by theoretical calculations that the energy barrier between charged droplets in water-in-oil emulsions is strongly diminished when the concentration of the emulsion is not extremely low. This is a consequence of the great extension of the diffuse electrical double layer in oil. The high concentration in the sediment (or cream) therefore strongly promotes flocculation. Gravity also promotes flocculation directly in all but the most dilute W/O emulsions because the weight of the particles in higher layers transmitted by the extended double layers presses on those in the lower layers and forces them together.

*TRIAL PRODUCTION OF ROLLER GAUGE AND ITS USE. M. Kawamata and F. Maruyama. Bulletin Technical Association Graphic Arts, Japan, Vol. 1, No. 1, December 1958, pp. 22-5 (in Japanese); Printing Abstracts 14, No. 10, October 1959, p. 808. A roller setting gauge for use particularly on rotary presses is described. A sheet steel tongue is inserted between two rollers and a dial indicates the force required to withdraw it. Operator errors are much less than when using sheets of paper and it is possible to check the accuracy of a roller at a number of points.

*CONTROL OF THE DIAMETER OF RUBBER ROLLERS. Anonymous. Roland Nachr., No. 12, May 1959, pages 35-6 (in German); Printing Abstracts, Vol. 14, No. 10, October 1959, page 796. The accurately cylindrical form of the rollers should be checked from time to time with an ordinary slide gauge. A tolerance of $\pm$ 1 mm is allowable. When measurements over the whole length of the roller are to be carried out, an adjustable calculating gauge is to be recommended.

*DAMPENER FOR LITHOGRAPHIC PRINTING. U. S. Patent #2,891,470 - Application October 23, 1956. Norman L. Rowe, and Gustave Reischl, - Assigned to Ideal Roller & Mfg. Co. Official Gazette 743, No. 4, June 23, 1959, p. 802. In a lithographic printing press having a plate cylinder and a dampener urged against said cylinder under a predetermined pressure to distribute water to the plate, said dampener comprising a base roll having a cylindrical surface of resilient material yieldable under pressure, and a strip of vegetable parchment paper substantially narrower than the length of said cylindrical surface wrapped closely around said surface through a plurality of revolutions to form a tube longer than said surface and closely fitting but detached from the latter at all points, the adjacent convolutions of said tube overlapping each other along the said surface to form areas of single and

double thickness alternating with each other along the full length of said surface, and the ends of said tube beyond said surface being contracted to a diameter smaller than that of said surface, said resilient surface being of a hardness within the range of about 5 to about 15 as determined by a Shore A Durometer, whereby the yieldability of said surface is sufficient to permit depression of said double thickness areas under said pressure and the consequent reshaping of said tube to a uniform diameter over its entire outer cylindrical surface.

*WEB TENSION CONTROL FOR ROTARY PRINTING PRESS. U. S. Patent #2,897,754 - Application March 21, 1957. William R. Spiller and Thomas H. Johnson - Assigned to Harris-Intertype Corp. Official Gazette 745, No. 1, August 4, 1959, p. 80. In a web type printing press including press drive means, a device for feeding the web from a rotatably supported web roll to the printing cylinders of the press comprising a driving member engageable with the outer peripheral surface of the web roll to rotate the latter at the speed of the driving member, a floating roller, means connected to said floating roller and continuously urging the latter into engagement with the web with a constant force to tension the web, a differential gearing unit having an output member connected to said driving member to drive the latter and first and second input elements, the output member being driven at a speed dependent on the directions and speeds of rotations of said input elements, means for driving said first input element in timed relationship to the press drive means, an infinitely variable speed transmission having an output element and an input element and a control member for adjusting the ratio of the speed of the output element to the speed of the input element, means driving the input element of said transmission in timed relationship to the press drive means, means connecting the output element of said variable speed transmission to said second input element of the differential, and means connected to said control member and responsive in a continuous manner to the movements of said floating roller to vary the speed of said output element continuously in accordance with the movements of said floating roller and in a direction to oppose the movement of the floating roller.

*METHOD OF AND MEANS FOR OFFSET PRINTING. U. S. Patent #2,905,082 - Application October 7, 1954. Chas. M. Stearns and Oscar J. Van Leer - Assigned to Grotnes Machine Works, Inc. Official Gazette 746, No. 4, September 22, 1959, p. 953. The method of offset printing on roughened or indented surfaces utilizing a flexible blanket comprising the steps of forming a first closed chamber with one side of said blanket constituting one wall of the chamber, evacuating said chamber so as to apply a vacuum to said one side of the blanket, applying an ink impression to the other side of the blanket, forming a printing chamber with the surface to which the impression is to be transferred and the inked side of the blanket included in the chamber in juxtaposition and spaced from each other, evacuating said printing chamber while maintaining said first chamber evacuated so as to apply a vacuum on both sides of the blanket and so as to maintain the blanket out of contact with said surface, then admitting pressure greater than the vacuum pressure in said printing chamber to said first chamber while maintaining the printing chamber evacuated causing a pressure differential on the opposite sides of the blanket which expands the blanket into the printing chamber and forces the same to engage the surface so as to transfer the impression.

*METHOD AND APPARATUS FOR DUPLICATING. U. S. Patent #2,902,926 - Application Oct. 30, 1956. Wilhelm Ritzerfeld, Berlin-Dahlem, and Gerhard Ritzerfeld, Berlin-Grunewald, Germany. Official Gazette 746, No. 2, September 8, 1959, p. 348. In a duplicating method, in combination, the steps of mixing a moistening liquid with a fatty substance to regulate the amount of moistening liquid in the mixture and of applying the mixture to a printing form for moistening said form; and then applying

printing ink to said printing form independent from the application of said moistening liquid and said fatty substance. In a duplicating machine, in combination, a printing drum; a printing form carried by said printing drum; first supply roller means; means for applying a moistening liquid to said first supply roller means; second supply roller means; adjustable means for applying a controllably variable amount of a fatty substance to said second supply roller means; transfer roller means in engagement with said first and second supply roller means and with said printing form and adapted to apply to said printing form said moistening liquid and said fatty substance; and means spaced from and independent of said transfer roller means for applying ink to said printing form.

WEB OFFSET FEELING GROWING PAINS. Anon. Lithographers' Journal 44, No. 2, May 1959, p. 51 (1 page). Web offset demands that special features be built into paper. Such features include (1) high sheet strength because of web tension and intimate contact with the blanket, (2) insoluble coating to prevent piling, (3) free of dust, loose fibers and lint, (4) rolls must be uniformly wound, and (5) low moisture content to minimize blistering due to high drying temperature.

*DAMPENING APPARATUS FOR OFFSET PROCESS PRINTING PRESSES. U. S. Patent #2,897,753 - Application January 17, 1958. Leonard G. Erzinger - No assignment. Official Gazette 745, No. 1, August 4, 1959, p. 79. In an offset printing press, a plate cylinder, an offset printing plate removably mounted thereon, an inking roller mounted for inking engagement with said offset printing plate, and water feeding means situated adjacent the inking roller and adapted to feed water thereto, said water feeding means comprising a nozzle directed at the inking roller and an elevated water reservoir feeding into said nozzle, whereby the water contents of said reservoir are fed by gravity through said nozzle and against said inking roller, a carriage being provided to support said nozzle, and reciprocating drive means being operably connected to said carriage to cause it and the nozzle to move longitudinally of the inking roller in reciprocating fashion, whereby the water flow from said nozzle is directed against the entire effective length of the inking roller, said reciprocating drive means comprising an endless chain mounted on a pair of sprockets, one adjacent each end of the inking roller, said chain having upper and lower runs extending longitudinally of said inking roller, one of said sprockets being connected to rotary drive means to cause continuous movement of the endless chain, a first pin projecting laterally from said chain, a second pin projecting from the carriage for engagement with the first pin when the first pin is situated in the upper run of the endless chain, and a third pin projecting from the carriage for engagement with the first pin when the first pin is in the lower run of the endless chain, whereby engagement of the first pin with the second pin causes the carriage to move in one direction longitudinally of the inking roller and whereby engagement of the first pin with the third pin causes the carriage to move in the opposite direction longitudinally of the inking roller.

*PRINTING. U. S. Patent 2,915,006 - Application July 3, 1956. Warren B. Howe - Assigned to Addressograph-Multigraph Corp. Official Gazette 749, No. 1, December 1, 1959, p. 74. In a lithographic printing machine having a printing cylinder engageable with a blanket cylinder and a pressure roller engageable with the blanket cylinder, a train of rollers for transferring liquid to the printing cylinder and including a form roller engageable with the printing cylinder, said form roller having an absorbent cover wound helically thereon in successive convolutes for substantially the entire length of the form roller, said cover comprising an absorbent strip affording the outer absorbent surface of the cover, an attaching strip secured to the back of the absorbent strip, said attaching strip being of less width than the absorbent strip so as to have side edges running parallel to the side edges of the absorbent strip to afford marginal side portions for the absorbent strip free of an unsecured to the attaching strip substantially for the full length of

the absorbent strip, and said marginal side portions of the absorbent strip being matted closely together in edge-eliminating relation where the adjacent convolutes about one another in helical relation along the length of said form roller.

GRAPHIC ARTS - GENERAL

*REQUIREMENTS IN CARTON BOARD FOR PRINTING - YESTERDAY AND TODAY. Allg. PapRdsch. No. 14, 20 July 1959, pages 706-9 (in German); Printing Abstracts, Vol. 14, No. 10, October 1959, page 819. After dealing with the printing and cutting-and-creasing of carton board, the printing of glossy carton board and chromo and imitation chromo carton board is discussed, with particular reference to pick resistance, ink acceptance, and the gloss of inks. Bronzing and its defects, the choice of the inks for the particular board, sprayers, lacquering and laminating with cellulose film are discussed in detail.

*K4 ANTI-SET-OFF POWDER. G. Kaufmann. Form und Technik, Vol. 10, No. 7, July 1959, pp. 275-7 (in German); Printing Abstracts 14, No. 10, October 1959, p. 808. A brief account is given of the development of print spraying and the effect of liquid sprays on health is noted. The properties and merits of the K4 anti-set-off powder are discussed and its harmlessness in use is stressed. The powder is made (under DBP 878,659) from limestone (Print. Abstr. 1407/56) and the grades available are K4/15 for ordinary papers, K4/20 for heavy, rough papers, K4/30 for carton board, K4/40 for heavy board, K4/60 for specially heavy board, and K4/80 for exceptional requirements.

*ELECTRIC IMAGE DEVELOPMENT. U. S. Patent 2,895,847 - Application December 21, 1953. Clyde R. Mayo - Assigned to The Battelle Development Corp. Official Gazette 744, No. 3, July 21, 1959, p. 803. The method of developing an electrostatic image on an electrostatic image-bearing member comprising forming a substantially uniform layer of finely-divided electrostatically charged powder marking particles on a smooth support surface extending across the image-bearing portion of said image-bearing member, said particles loosely adhering to said surface by electrostatic attraction, contacting said image-bearing member with said layer of marking particles, sliding said surface bearing said layer of marking particles relative to said image-bearing member and removing said surface from said image-bearing member whereby said marking particles are selectively transferred from said layer to said image-bearing member in the pattern of the electrostatic image.

*DEVELOPMENT OF ELECTROSTATIC IMAGE AND APPARATUS THEREFOR. U. S. Patent #2,901,374 - Application May 4, 1955. Robert W. Gundlach - Assigned to The Battelle Development Corp. Official Gazette 745, No. 4, August 25, 1959, p. 1096. A method of developing an electrostatic latent image comprising areas of varying charge on an insulating surface, said process comprising forming a deposit of finely-divided electrostatically charged powder material on one surface of an insulating sheet, bringing a printing sheet into contact with the powder-bearing side of said insulating sheet to thereby form a sandwich, contacting one side of said sandwich with an insulating surface bearing an electrostatic latent image, said insulating surface being positioned on a conductive backing member and applying a voltage to the opposite side of said sandwich from said insulating surface to cause powder material to deposit on said printing sheet in conformity with said electrostatic latent image.

*PROCESS FOR DEVELOPING ELECTROSTATIC IMAGE WITH LIQUID DEVELOPER. U. S. Patent #2,899,335 - Application October 31, 1956. Virgil E. Straughan - Assigned to General Dynamics Corp. Official Gazette 745, No. 2, August 11, 1959, p. 523. In a method of electrostatic printing which comprises: preparing a liquid developer composition consisting essentially of a finely divided electrostatically attractable

solid opaque pigment material having a particle size not greater than 40 microns and which is dispersed in a high resistivity organic liquid having a specific resistivity of at least about 10^9 ohm centimeters, and bringing said liquid developer composition into contact with a member bearing an electrostatic charge image whereby said charge image is converted to a visible image by selective deposition thereon of the solid charged particles in said dispersion, the improvement which comprises modifying said liquid developer composition by including therein an organic material which is soluble in said liquid at elevated temperatures and which is relatively insoluble in said liquid at temperatures of about 20°C. and which is electrostatically attractable when in solid form and which comprises a solid particulate material of the group of materials consisting of polyamides and shellac.

*PROCESS OF DEVELOPING ELECTROSTATIC IMAGE WITH CHARCOAL. U. S. Patent 2,899,331 - Application January 25, 1955. Richard E. Hayford - Assigned to Haloid Xerox Inc. Official Gazette 745, No. 2, August 11, 1959, p. 522. In a process for making visible an electrostatic image comprising areas of varying electrostatic charge on an electrically insulating surface by contacting said image with an aerosol of positively electrostatically charged finely-divided charcoal whereby said charcoal deposits on said insulating surface in conformity with said image, the improvement comprising generating said positively charged aerosol by passing through a brass orifice in turbulent flow a gas stream containing therein finely-divided wood charcoal characterized by having been heated to about 1000°F. in a non-oxidizing atmosphere.

*PRINTABILITY - WHAT DOES IT MEAN? R.H.A. Davies. Print in Britain 7, No. 3, July 1959, pp. 74-6; Printing Abstracts 14, No. 11, November 1959, p. 856. Possible definitions, factors affecting printability, and testing methods are briefly reviewed.

ALUMINUM FOIL PRINTING REQUIRES CAREFUL HANDLING. James T. Trousdale. The Inland Printer 141, No. 6, September 1958, pp. 82-83 (2 pages). A brief, but informative discussion of foil printing by gravure, letterpress, lithography, and silk screen giving the advantages and problems of each. Rotogravure allows high speed drying, but cylinder costs are high. Flexography of foil is limited to 85 line screens, while lithography allows reproduction of full color photographs (133-150 line screen) on a large range of stocks. Build-up of press water results in non-drying or poor adhesion. Heat-set inks are being adopted for letterpress foil printing. Silk screening of foil is excellent for many purposes, but halftones must be kept below 85 line.